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## Product Information

### Monoclonal Anti-GAPDH–Peroxidase

#### Clone GAPDH-71.1

produced in mouse, purified immunoglobulin

Catalog Number **G9295**

#### Product Description

Monoclonal Anti-GAPDH–Peroxidase is a solution of a Protein A purified fraction of monoclonal anti-GAPDH, isolated from ascites fluid of the GAPDH-71.1 hybridoma, conjugated to horseradish peroxidase. Monoclonal Anti-GAPDH (mouse IgM isotype) is derived from the hybridoma GAPDH-71.1 produced by the fusion of mouse myeloma cells (NS1 cells) and splenocytes from BALB/c mice immunized with rabbit GAPDH. The isotype is determined using a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Catalog Number ISO2.

Monoclonal Anti-GAPDH–Peroxidase recognizes human, monkey, bovine, canine, rat, mouse, hamster, mink, rabbit, chicken, and turkey GAPDH. It does not cross-react with non-vertebrate and prokaryote GAPDH. The conjugated antibody may be used in immunoblotting (~37 kDa). The non-conjugated antibody can also be used in ELISA and immunocytochemistry.

The enzyme glyceraldehyde-3-phosphate dehydrogenase (EC 1.2.1.12) is a tetramer of identical chains that catalyzes the reversible oxidative phosphorylation of glyceraldehyde-phosphate in the presence of inorganic phosphate and nicotinamide adenine dinucleotide (NAD). This is an important energy-yielding step in carbohydrate metabolism. GAPDH is found in almost all species with a low rate of evolutionary changes.<sup>1</sup> GAPDH was found also to bind to several proteins such as: actin, tubulin, amyloid precursor, polyglutamine peptides, DRPLA, and huntingtin. In human embryonic kidney and mouse neuroblastoma cell lines, it was shown that nuclear translocation and associated neurotoxicity of mutant huntingtin is mediated by a ternary complex of huntingtin, GAPDH, and a ubiquitin E3 ligase named SIAH1. Over-expression of GAPDH or SIAH1 enhances nuclear translocation of mutant huntingtin and cytotoxicity.<sup>2</sup> GAPDH was also found to be part of the multicomponent OCT1 coactivator complex, OCA-S. This complex is essential for the S phase-dependent

histone H2B transcription. This association links the H2B transcriptional machinery to cell cycle regulation and possibly to the cellular metabolic state (redox status).<sup>3</sup>

#### Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, and 0.01% merthiolate as a preservative.

Antibody concentration: 2-3 mg/mL

Molar ratio Ab/E: 0.4-0.8

Enzyme activity: at least 40 u/mL

#### Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

#### Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in “frost-free” freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

#### Product Profile

Immunoblotting: a working dilution of 1:35,000-1:70,000 is recommended using A431 total cell extract.

**Note:** In order to obtain the best results using various techniques and preparations, we recommend determining optimal working dilutions by titration.

#### References

1. Burke, J.R., et al., *Nature Med.* **2**, 347-350 (1996).
2. Bae, B.-I., et al., *Proc. Nat. Acad. Sci. USA*, **103**, 3405-3409 (2006).
3. Zheng, L., et al., *Cell*, **114**, 255-266 (2003).

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